

# Log Detective for openSUSE?

*Exploring ways to cross-pollinate innovative approaches to analyzing package build failures*

## Challenge Introduction

To truly benefit from open source, adoption, and cross project collaboration is vital. It is almost always better to adopt an existing solution and co-develop enhancements, rather than everyone attempting to develop everything you need from scratch. This is one of the superpowers of open-source software development!

In the past, both Fedora and openSUSE projects have borrowed from each other. For example, Fedora uses openQA which was originally developed by the openSUSE project, but now receives contributions and adoption from other communities.

The openSUSE and the Fedora projects have some similarities in their software stacks. One of those similarities is that they both use RPM for package management. There are already areas where there is a common upstream projects around, for example rpmlint, which receives contributions from a diversity of sources. SUSE wants to help build on that collaboration further, by exploring ways of adopting Fedora's approach to analyzing package build failures using AI - Log Detective.

This is a challenge with real-world positive impact. Package build failures are often difficult to diagnose for casual contributors or maintainers. Enhanced capability to interpret build failures has the potential to bring more contributors to the software commons.

## Who is behind the challenge?

SUSE is the sponsor of the challenge, but all contribution that would result from the challenge will be to the upstream, community projects — Open Build Service and/or Log Detective. Your eventual contributions will be contributions to those open source projects.

SUSE is a global leader in innovative, reliable and secure enterprise open source solutions, including SUSE Linux Enterprise (SLE), Rancher, Kubernetes security and observability solutions.



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## What is the challenge?

The goal of this project is to explore different ways of contributing to Log Detective with some semi-automated data and investigate interesting ways of integrating the model in openSUSE development workflow. It could be with a new osc plugin, implementing some integration in OBS webpage or APIs, or any other tooling around building packages and reading logs of failing builds.

## What do we expect from the students?

The result of this project will be:

- Documentation of research results about the usage of AI models to debug failing builds.
- Experimental proof of concept tools / scripts / API calls to feed log detective's datasets with usable training data and to use the model's analysis results useful for openSUSE packagers.
- A comparison and evaluation of the approaches attempted, their advantages and disadvantages

## What is a good solution?

A good solution to the challenge is one that shows the path to an eventual integration of Log Detective into the openSUSE development workflow, based on the results of the research and experimentation.

This does not mean that one of the experimental approaches will be directly implemented by the project. Rather, experimentation should provide some usable outcomes about which approaches could be suitable and what are their challenges or benefits.

